

REMARKS

Claims 21-25, 29-38 and 48-51 are rejected. Claims 1-20, 26-28, 39-47 and 52-54 are withdrawn from consideration. Claims 35-38 have been amended. Claims 21-25, 29-38 and 48-51 are presently pending in the application. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

The basis for the amendment of Claims 35-38 is found on page 3, lines 18-20 of the specification as originally filed.

Double patenting:

The Examiner has provisionally rejected Claims 21-25, 29-38, and 48 and 49 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-45 of copending Application No. 10/028,129. The Applicants have included a terminal disclaimer to obviate this rejection.

The Examiner has also rejected Claims 21, 22, 25, 49 and 50 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 and 1-9 of U.S. Patent No. 6,528,147 and 6,475,602 respectively, indicating that, although the conflicting claims are not identical, they are not patentably distinct from each other because the patent claims recite an ink jet recording element including a support and an image receiving layer comprising porous polymeric particles having a median diameter of less than about 1 micron, the term "polymeric," as recited by these claims, includes polyester, and the support materials may be paper or opaque plastic. The Examiner therefore indicates that the inclusion of porous polyester particles of less than 1 micron would have been obvious from these claims. The Applicants have included a terminal disclaimer to obviate this objection. However, the Applicants would like to suggest that, as argued below, the present invention is unobvious with respect to U.S. Patent No. 6,528,147 and 6,475,602 and request the Examiner to consider the following argument prior to finalizing the requirement for the terminal disclaimer.

Rejection of Claims 35-38 under 35 USC § 112:

Claims 35-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, as there is no antecedent

basis for precursor polyester in these claims. The Applicants have amended the claims to provide proper antecedent basis.

Rejection Of Claims 21-25, 29-38 and 48-51 Under 35 U.S.C. §103(a):

The Examiner has rejected Claims 21-25, 29-38 and 48-51 under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (Japanese Kokai Patent Application No. Hei 7[1995]137432), as Maeda discloses an ink jet recording paper having an ink absorbing layer coated on a support the ink absorbing layer (the top most layer) containing porous polyester resin particles.

Maeda relates to an ink absorbing layer comprising hollow crosslinked particles in a binder on the surface of a support. Maeda fails to mention the use of porous polyester particles smaller than 0.5 micrometers.

The present invention relates to porous polyester particles of less than 0.5 micrometers in diameter. These particles, when used in coatings provide enhancements in the gloss of the coating.

To establish a prima facie case of obviousness requires, first, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references (or references when combines) must teach or suggest all the claim limitations.

Maeda fails to mention the use of particles of diameter less than 0.5 micrometers and fails to mention the use of these particles to enhance the gloss of a coated layer. In fact, the particle size range of the particles of Maeda range from 0.5-100 micrometers and Maeda teaches that, if the particle size is too small, the particles become impractical as an additive for a coating material. See paragraph [0006] of Maeda. Maeda also fails to produce a reasonable expectation of success, as Maeda fails to mention that particles of size less than 0.5 micrometers prove useful in providing a coating with increased gloss and also teaches that these particles are not useful as additives in coating materials (see paragraph [0006]). Finally, Maeda fails to teach all of the limitations of the present claims as it fails to teach or disclose the use of particles of less than 0.5 micrometers. As a result, Maeda fails to support a prima facie case of obviousness under 35 U.S.C. 103(a).

Even assuming such a case is made, the reference to Maeda teaches away from the present invention by indicating in [0006] that smaller particles may not be used as coating additives. In addition, the present invention provides a surprising result of increased gloss when the particles are used as an additive in a coating, as illustrated by Elements 1, 2, and 5 in Table 5 on page 26 of the specification. In addition, the Declaration of Leon, paragraphs 4-8, provides reasons why one of ordinary skill in the art would not consider the use of porous particles according to the present invention obvious.

The Examiner also indicates that, according to Maeda, the volume average particle diameter is 0.50100 microns, and the Examiner cannot patentably distinguish 0.5 microns from less than 0.5 micrometers in the absence of a showing of the criticality of this feature, especially because applicants' contemplate having multiple types of porous polyester, some of which have a greater average particle diameter. The Examiner has considered applicants' showings but was unable to identify showings that demonstrated the criticality of particle size by varying only this feature of the recording medium. The following Table A has been prepared to clarify the results obtainable with the inventive particles by combining Tables 4 and 5 with the description of preparation of the elements on pages 23-26 of the specification. No new data or other information has been added in the preparation of this table.

TABLE A

PE dispersion	Particle Size	Mode 1	Mode 2	Element	60° gloss
		Mean diameter (micron)	Mean diameter (micron)		
PE-1	<0.5	0.356	--	1	36
PE-2	<0.5	0.181	0.351	2	72
PE-3	Mix	0.390	2.70	3	20
PE-4	Mix	0.470	2.24	4	28
PE-5	<0.5	0.174	0.391	5	70
PE-6		0.430	5.86	6	40
PE-7	>0.5	0.897	2.62	Control C-1	3
PE-8	>0.5	0.682	3.10	Control C-2	5
Commercial Product	--	--	--	Control C-3	88
Commercial Product	--	--	--	Control C-4	38

Table A indicates that coating made with porous polyester particles (1, 2, and 5) according to the present invention produce glosses higher than or equivalent to commercial products. Table A also illustrates that bimodal coatings in which at least one of the modes has a diameter of less than 0.5 micrometers (2, 3, 4 and 5) have improved gloss when compared to coatings (C-1 and C-2) made with particles of greater than 0.5 micrometers. This is also supported by the Declaration of Landry, paragraphs 4 and 5, submitted herewith.

The Examiner also indicates that, since the present inventive particles may be a component of a system of particles, it would appear that all of these claim limitations may be met by subdividing the particles disclosed by the prior art reference into different categories, so that a peak in particle size distribution is formed as set forth in claim 29 or 31 in one case, or so that there is a standard deviation of particle sizes as set forth by claim 30 in another. As illustrated above in Table A, bimodal distributions, which include at least one mode with a particle size of less than 0.5 micrometers is not taught by the reference and provides surprising results. Also, as discussed in paragraphs 13 - 15 of the Declaration of Leon, the present inventive particles are not a component of a system according Maeda.

The Examiner also indicates that the support may include inorganic or organic fillers and sizing agents, the reference discloses that sizing agents include polyvinyl alcohol, the reference discloses use of underlayers or specialty supports in order to obtain a smooth surface, and, normally, smoothness and gloss are related characteristics and it is also well known in the art to form or treat the ink receiving layer in a way that maximizes gloss when a glossy surface is desired, for example, it is well known to calender the surface of the medium to increase gloss. The Examiner indicates that it would have been obvious to one of ordinary skill in the art to treat the surface of the medium of the reference in order to obtain a desired level of gloss. While it might be true that there are a variety of methods for controlling gloss, the utility of the present application relies on the use of porous polyester particles of diameter less than 0.5 micrometers to improve gloss and there is no showing that the use of particles of diameter less than 0.5 micrometers are known to improve the glossiness of coatings. The attached Declaration of Leon also indicates, in paragraph 9, that for various known surface

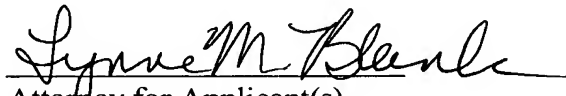


smoothing methods, at least one of which is calendaring, would potentially render the present particles inoperable.

The Examiner also indicates that the reference discloses the formation characteristics of the polyester particles in paragraphs, including the use of fumaric or maleic acid in forming the polyester, inclusion of sulfonated monomers, number average molecular weight of the polyester, and the content of ionic groups, and although the acid content is not described in terms of an acid number, the reference does disclose mole % of acid and it would have been obvious to determine the acid number using this information. As discussed in the Declaration of Leon, paragraphs 10, 11, and 12, it would not be obvious to one of skill in the art to determine the acid number using the information provided by the reference.

It is believed that the foregoing is a complete response to the Office Action and that the claims are in condition for allowance. Favorable reconsideration and early passage to issue is therefore earnestly solicited.

Respectfully submitted,


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